

PUBLIC INTERNATIONAL BID

LAPTOPS

TECHNICAL APPENDIX

1. Purpose
2. Bid
 - 2.1. Submission and quote method
 - 2.2. Documentation
 - 2.3. Samples
3. Warranty
 - 3.1. Dead on Arrival
 - 3.2. System failure
4. Term and conditions of the delivery
5. Quality controls
6. Requirements
 - 6.1. Specific Category 1 - Ubuntu Laptops
 - 6.2. Specific Category 2 - Dual boot Ubuntu/Windows laptops
 - 6.3. Common for both categories
 - 6.4. Motherboards test bench – Mandatory quote
 - 6.5. Security system – Optional quote
 - 6.6. Management console for Windows devices – Optional quote
7. Criteria for the technical assessment of the device
 - 7.1. Assessment of background
 - 7.2. Compliance with mandatory requirements
 - 7.3. Assessment of samples
 - 7.3.1. Performance and experience of user
 - 7.3.2. Maintenance
8. APPENDIX I: Quote charts
9. APPENDIX II: Confidentiality and data protection

1. Purpose

Ceibal calls for an international public bid for the acquisition of up to 125,000 user devices to be delivered to Plan beneficiaries.

Laptops are divided into 2 categories:

- **Category 1:** Ubuntu laptops
- **Category 2:** Dual boot Ubuntu/Windows laptops

Moreover, the bidding specifications include the quote of a motherboard test bench for the diagnosis during repairs, an anti-theft security system and management console of the devices with Windows operating system. The quote of the test bench is **mandatory**, while the quote of the security system and management console is **optional**.

The bidder shall quote the spare parts in FOB Origin. At its discretion, the bidder may quote the spare parts CIF Montevideo (port or free zone).

The bid shall be submitted in accordance with provisions in section 2. BID. Ceibal Centre reserves the right to reject a bid which is not submitted in accordance with the quote and pricing scheme.

All products acquired by the bidder and/or the services provided by the bidder are governed by the confidentiality and data protection provisions specified in *Appendix II: Confidentiality and data protection*.

2. Bid

It shall be possible to submit bids for laptops in one or both categories, and **it shall possible to bid at most 2 models in each category**.

All submitted documentation must be segmented, **identifying each product by its corresponding model in the technical and economic offers**.

2.1. Submission and quote method

The technical offer will be presented segmented into the following folders.

1. Folder with specification of Factory background. It shall detail:
 - Factory that shall produce bided devices
 - General volume of production of the factory in the last 12 months
 - Volume of production of laptops of the factory in the last 12 months
 - List of clients
 - Average daily production of laptops
 - Slot time for initiation of production (acquisition of raw materials and preparation of production line)
2. Folder with background of the bidder: It shall detail:
 - Background in the provision of similar consumer electronic devices in the last 12 months
 - Background of educational projects in which it has taken part
 - Background of work with the factory that shall produce the devices indicated in 1., setting forth the time of joint work, projects and volume of devices
 - List of clients and corresponding contact details
3. Folder with all completed charts in section 6. REQUIREMENTS for each bided product.
4. Folder with the documentation requested in section 2.2 DOCUMENTATION for each bided laptop model.
5. Folder with warranty specifications in accordance with requirements of section 3. WARRANTY.
6. Folder with the specification of delivery terms in accordance with provisions in section 4. DELIVERY TERM AND CONDITIONS.
7. (Optional) Folder with operational description and dimensioning of the anti-theft security system.
8. (Optional) Folder with operational description and dimensioning of the management console of devices.
9. (Optional) Folder with the supplementary information that the bidder considers relevant to provide.

The financial offer will be submitted in a closed envelope with the following folder segmentation:

1. Folder with the complete charts of *Appendix I; Quote charts* of the device category it may correspond.
2. (Optional) Folder with additional quote for warranty, in case of offering it.
3. (Optional) Folder with quotes additional to those specified above, if it may correspond.

2.2. Documentation

The documentation to be included in the documentation folder of the technical bid, for each bided model, is the following:

DOCUMENTATION		
MANDATORY WITH THE OFFER		
2.2.1	TECHNICAL SPECIFICATIONS	Document with technical specifications of each tendered model.
2.2.2	TECHNICAL DOCUMENTATION ON DISASSEMBLING	Technical document specifying the complete disassembling procedure of the device.
2.2.3	PROVISION OF MOTHERBOARDS' COMPONENTS	Indicate if the bidder may provide the components of the motherboard that shall be detailed in the BOM (see requirements of documentation 2.2.10).
2.2.4	TECHNICAL DOCUMENTATION FOR INSTALLING AND CUSTOMIZING FIRMWARE AND OPERATING SYSTEM	Technical documentation which details the tools and procedures to customize and install the firmware and operative system of the device. Specify the type of modifications that can be made at the Firmware Level. As a way of example. Plan Ceibal uses Clonezilla and Windows Configuration Designer.
2.2.5	INSTALLATION OF OPERATING SYSTEM IN SEVERAL DEVICES	Procedure for the installation of the operating system in several devices simultaneously, for example, through a removable device or a PC. Alternatives easing the operation and minimizing the use of external resources shall be prioritized.
2.2.6	SERIES NUMBER SETTINGS	Procedure and tool setup of the series number.
2.2.7	MOTHERBOARDS TEST BENCH	Document that details the characteristics of the testing bench of motherboards, including pictures.

The following documentation shall be delivered mandatorily with each shipment of devices or with each change of software, as applicable:

DOCUMENTATION		
Mandatory with every shipment of devices, or with every change of hardware, as applicable.		
2.2.8	RoHS CERTIFICATE	RoHS standard compliance certificate. (Detailed documents with the protocols of applied tests are not required).
2.2.9	FCC CERTIFICATE	FCC STANDARD Compliance Certificate (Detailed documents with the protocols of applied tests are not required).
2.2.10	Bill of Materials (BOM):	List of all hardware components making the device, each one with an identification code, including the case and any other individual component which may be replaced in case of breakdown.

2.2.11	Schematic, layout and Board Assembly Information (BAI)	Schematic, layout and Board Assembly Information (BAI) of the Motherboards in digital format. This information will be submitted once the production gets started (or at least before each shipment) and every time the awardee gives notice of a modification in the hardware.
2.2.12	EXPLODED VIEW DRAWING	Exploded View Drawing: technical drawing of the assembly and connection among all atomized parts of the equipment, each one identified with a code. This information will be delivered once the production gets started or at least before each shipment and every time the awardee gives notice of a modification in the hardware.
2.2.13	DATASHEETS	Datasheets of the main components of the devices, such as battery, screen, camera, etc., and of the main components of the motherboard as integrated circuits and connectors.
2.2.14	MSDS OF BATTERIES	Material Safety Data Sheet (MSDS) of batteries.
2.2.15	CHARGER: RoHS CERTIFICATE	RoHS standard compliance certificate of the charger, in case it is not included in the RoHS Certificate of the device. (Detailed documents with the protocols of applied tests are not required).
2.2.16	CHARGER: CERTIFICATE EN60950	Certificate of compliance with regulation EN60950 (or its updates) Information technology equipment –Safety of the laptop and charger. (Detailed documents with the protocols of applied tests are not required).
2.2.17	CHARGER: CERTIFICATE IEC61000	Certificate of compliance of regulation IEC 61000 (or its updates) Electromagnetic compatibility (EMC), of the laptops and charger. (Detailed documents with the protocols of applied tests are not required).
2.2.18	CHARGER: CERTIFICATE EN55022	Certificate of compliance of regulation EN55022 (or its updates), Information technology equipment Radio disturbance characteristics, of the laptop and charger. (Detailed documents with the protocols of applied tests are not required).
2.2.19	DEVICES FORM	Information chart of the devices (see description in this section).
2.2.20	LOGISTICS FORM	Form of logistic information (see description in this section).

The information forms for each shipment are described below:

- DEVICES FORM (Requirement 2.2.19)
 - Part number
 - Series number
 - Pallet number / number of master box containing the device
 - MAC addresses of all network cards in the device (for example, WLAN, Ethernet, Bluetooth)
 - Part number and series number of the main components (at least motherboard, screen, LCD and battery)

- Identifier obtainable through software with the method specified by the bidder
- LOGISTICS FORM (Requirement 2.2.20)
 - Dimensions of individual box
 - Weight of individual box
 - Dimensions of master box
 - Weight of master box
 - Number of individual boxes per master box
 - Number of master boxes per pallet
 - Height of pallet

2.3. Samples

FIVE identical samples of each laptop model bided with their chargers shall be delivered at the submission of the bid, regardless of the fact that Ceibal may already have samples delivered by the bidder in a different context (other bids, supplier records, expressions of interest, technological forecast, etc.).

The samples of category 1 shall be delivered with Ubuntu, the samples of category 2 may be delivered only with Windows or with dual boot Windows/Ubuntu. An essential part of the technical assessment shall be made on these samples (see section 7. TECHNICAL ASSESSMENT CRITERIA). **The specifications and performance of the final product may not be inferior than in the sample. This aspect shall be verified in the quality controls that determine the acceptance of the product.**

In exceptional cases and when there were justified reasons at Ceibal's discretion, the bidder may defer the delivery of samples for a reasonable term to be assessed by Ceibal.

Once the bidding process is completed the awarded bidder shall provide TWENTY identical samples of the awarded model for the development of Ceibal's software image **within 14 days as from the award**. The hardware of these samples should be the most similar possible to the final product. Moreover, the bidder shall also provide TWENTY other identical samples of the awarded model for training on repairs within 60 days as from the award. **These 40 samples are not part of the awarded batch and shall be borne by the supplier.**

Some tests to be performed with the samples may result in the destruction of these, and those samples which are not destroyed may be returned in different conditions from that in which these were delivered. The bidder will have a 4-week period as from the award to pick up submitted

samples. If the previous term is completed and these have not been picked up, Ceibal Centre may freely dispose of them, and the bidder shall not be entitled to any claim whatsoever.

3. Warranty

The following warranty conditions are mandatory:

3.1 Dead on Arrival

Warranty for the replacement of devices with DOA flaws for a period of 90 days as from the arrival: 5 laptops every 1000.

3.2 System failure

Ceibal may request the awardee the necessary replacement parts or the replacement of the devices in case of detecting a system failure attributable to the design or manufacturing of the devices. Costs derived from the execution of this warranty shall be exclusively borne by the supplier.

If the bidder presents **additional** warranties, it shall detail them in the technical proposal. If the additional warranty conditions proposed by the bidder imply additional costs, these shall be presented in the economic offer, quoted independently.

The bidder shall guarantee that the products provided by virtue of the agreement are new, complete, unused and free from flaws attributable to the design, the materials, the manufacturing, the storage conditions (appropriate packing, temperature and humidity), transfer or any act or omission of the bidder that could appear in the regular use of the products in the conditions existing in the country.

4. Term and conditions of the delivery

4.1 Terms of delivery

: The desirable maximum terms of delivery are as follow:

- ETA of the 50% of the awarded batch: 120 calendar days after the notification of the award resolution.
- ETA of the remaining 50% of the awarded batch; within 30 calendar days after the delivery of the first 50% or April 15th, 2020, whatever happens first.

These terms include the development of the product, software image (that takes an average time of four weeks once the samples for the development with all drivers are available), production, eventual certifications and shipment.

If it is not able to meet the maximum terms, the bidder shall specify the delivery terms in its bid. **The same delivery terms shall apply both for laptops and spare parts.**

4.2 Conditions of delivery

All devices sent to Ceibal must be made up with the same components. If this cannot be met, the awardee shall send written notice to Ceibal at least 60 days in advance and Ceibal shall validate the new BOM.

The awardee must deliver the devices in accordance with the following specifications:

- Each pallet shall be labeled with the following information:
 - Model of the device / batch / shipment (**pallets containing more than one device model shall not be accepted**)
 - Pallet number/ total number of pallets of the batch
 - Number of master boxes in pallet
 - List of master boxes of each pallet
- Each master box shall be labeled with the following information:
 - Device model / batch / shipment
 - Number of master box / total number of master boxes of the batch
 - Series number (barcode and alphanumeric) of each device in the master box
 - Description of the product
- Each individual box shall be labeled with the following information:
 - Device model
 - Series number (barcode and alphanumeric) of the device

The design of each individual box and each master box must be customized according to the specifications to be agreed between Ceibal Centre and the awardee.

Ceibal Centre may request the addition of a printed brochure with recommendations of use and care of the device in each individual box.

5. Quality controls

Ceibal Centre will perform three quality controls to the awarded products which may partially or totally reject the inspected batches. These three inspections are:

1. inspection at origin before shipment
2. validation of golden samples the awardee shall send to be assessed in Ceibal Centre (10 devices for each produced batch, sent through air transportation at the cost of the awardee)
3. Final inspection in Ceibal after receiving the shipment.

Ceibal Centre or a representative appointed by it may be able to visit the factory before and/or during the production of the batches for Ceibal, prior arrangement between the parties and regardless of the quality controls. Ceibal Centre may also request the visit to the manufacturer to work jointly during the development process of the software image.

6. Requirements

6.1. Specific Category 1 - Ubuntu Laptops

MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS Y OBSERVATIONS
			YES	NO	
6.1.1	RAM MEMORY	Minimum 2GB DDR3. Specify if the component is onboard o removable.			
6.1.2	INTERNAL STORAGE	Minimum: 64GB. Specify the connection interface of the motherboard (mPCIe, M.2, SATA) and indicate if the component is onboard or removable.			
6.1.3	OPERATING SYSTEM	Ubuntu 18.04 LTS.			

6.2. Specific Category 2 - Dual boot Ubuntu/Windows laptops

MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.2.1	MEMORIA RAM	Minimum 4GB DDR3. Specify if the component is onboard o removable.			
6.2.2	INTERNAL STORAGE	Option 1: 64GB. Specify the connection interface of the motherboard (mPCIe, M.2, SATA) and indicate if the component is onboard or removable. This storage capacity must be quoted separately from the price of the device (see <i>Appendix 1: Quote Charts</i>).			
		Option 2: 128GB Specify the connection interface of the motherboard (mPCIe, M.2, SATA) and indicate if the component is onboard or removable. This storage capacity must be quoted separately from the price of the device (see <i>Appendix 1: Quote Charts</i>).			
6.2.3	OPERATING SYSTEM	Windows 10 y Ubuntu 18.04 LTS.			
OPTIONAL REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.2.4	AVAILABILITY OF CHIP TPM 2.0	Indicate if the device can be delivered with chip TPM 2.0. If yes, and if the chip has an additional cost, it shall be quoted separately from the price of the device (see <i>Appendix 1: Quote Charts</i>).			

6.3. Common for both categories

HARDWARE					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.3.1	PROCESSOR	Minimum: Dual core .64 bits. (Reference: Intel Celeron N3350)			
6.3.2	SCREEN	Size: 11.6". Specify if the Surface of the screen is brilliant or mate.			
6.3.3	MULTIMEDIA	Output for headphones			
		Jack connector with output for headphones.			

		Built in microphone and speakers			
		Camera: 1MP minimum.			
6.3.4	INPUT METHODS	QWERTY keyboard with distribution in Spanish.			
		Touchpad.			
6.3.5	PORTS	USB: 2 ports minimum. At least one USB 3.0.			
		Output of HDMI video.			
6.3.6	CONNECTIVITY	Minimum WiFi: network card 802.11 a/b/g/n 1x1. Specify interface of connection of the card to the motherboard.			

SOFTWARE					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.3.7	LANGUAGE	Operating system and all its interfaces and setup options in Spanish.			
6.3.8	CUSTOMIZATIONS TOOLS AND INSTALLATION	The Bidder shall deliver the tools detailed in the requirements of documentation 2.2.2 and 2.2.6. for customization of firmware and OS, and for the installation of the OS in several devices.			
6.3.9	DEVELOPMENT OF SOFTWARE IMAGE	The Bidder shall attend Ceibal Centre during the whole elaboration, setting and customization process of the software image. For example: provide assistance with Clonezilla and Windows Configuration Designer, depending on the case.			
6.3.10	DRIVERS	Sound			
		Camera			
		Touchpad			
		Suspension			

		Wifi			
		Peripheral			
		Keyboard			
		PowerOff			
		Charger			
6.3.11	FIRMWARE SETTINGS	The possibility of customizing the firmware (BIOS/UEFI) must be guaranteed, both of laptops and the ones delivered as replacement. Particularly, disabling the possibility of setting any booting password and the possibility of setting any password for accessing the massive storage media.			
DESIRABLE REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.3.12	HARDWARE TEST	Software or Firmware tools that enable the verification of built-in peripheral devices and ports of the device. This tool must be in Spanish and/or English. For more details of the desired characteristics see section 7: Assessment Criteria			

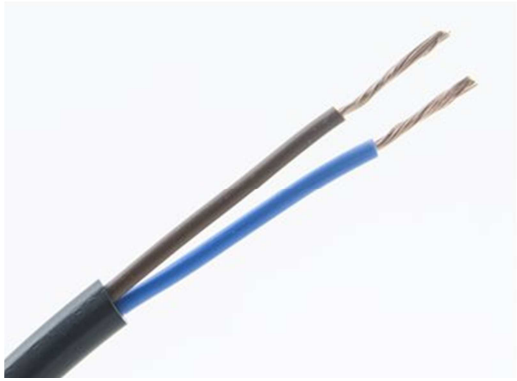

LOGISTICS					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.3.13	CEIBAL LOGOTYPE AND TRADING NAME OF THE MODEL	Ceibal will specify the logotype and trading name of the model, which shall be printed in the case through laser, silkscreen or other printing method. LABELS will not be accepted. This printing must comply with the following durability criteria:			
		Clearly visible in the case.			
		Indelible when in contact with alcohol.			
		Non-removable when sticking and unsticking packing tape.			

6.3.14	SERIES NUMBER AND BARCODE	Unique SN and its corresponding barcode printed in the case by laser, silkscreen or other printing method. In this item same considerations that those for the 6.3.12 CEIBAL LOGOTYPE AND TRADING NAME OF THE MODEL. The barcode must be readable by a bar code reader. Labels will not be accepted.			
		The series number must be obtained by software through a procedure indicated by the bidder.			
		The series number to be obtained by the software should be able to set up through a tool and procedure specified by the bidder. This requirement is necessary for the series number printed in the case and the series number obtained by the software to match in one device after the motherboard had been replaced (see requirement 2.2.6 SERIES NUMBER SETTINGS).			
6.3.15	IDENTIFICATION OF PARTS	The following components should have a bar code or QR code that can be scanned (this applies for parts included in the devices and spare parts):			
		Battery			
		Motherboard and screen. Additionally, they shall include a similar label or engraving through laser or silkscreen (with bar code) with the information of the series number.			
6.3.16	ECO FRIENDLY PACKING	The design of the packing must be ecofriendly, biodegradable cardboard and nylon.			

CHARGERS					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			SI	NO	
6.3.17	TYPE OF CONNECTOR	Europlug (CEE 7/16).			
6.3.18	ISOLATION IN 220V JACK PINES	The pine that connects to the power plug shall have isolation on its base.			
6.3.19	SEALED CHARGER	The charger shall only be opened through a destructive process. It may not have screws that enables the user to open it.			
6.3.20	STRENGTH FOR PINE EXTRACTION	Pines may only be removed from the body of the charger if a pressure over 40 kgf is applied.			

6.3.21	CEIBAL LOGOTYPE	Ceibal shall specify the logotype and trading name of the model. Apart from this information, the production batch and the electric specifications of the charger shall be printed in the case by laser, silkscreen or other printing method. Labels will not be accepted. Same considerations as for 6.3.12. CEIBAL LOGOTYPE AND TRADING NAME OF THE MODEL			
6.3.22	REINFORCED DC CABLE	DC CABLE must be reinforced. See description below.			

Description of requirement 6.3.22: REINFORCED DC CABLE:

Reinforced cable (meets mandatory requirement)	NON reinforced cable (does NOT meet the mandatory requirement)
	

LAPTOP CERTIFICATIONS					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.3.23	Restriction of Hazardous Substances	Document in proof of the RoHS certification of the device and all its components shall be requested as acceptance request of production batches.			
6.3.24	Federal Communications Commission	Document in proof of the FCC certification shall be requested as acceptance request of production batches.			

	Declaration of Conformity				
6.3.25	Information technology equipment - Safety	Document in proof of compliance with regulation EN60950 (or its corresponding updates) will be requested as acceptance request of production batches.			
6.3.26	Electromagnetic compatibility (EMC)	Document in proof of compliance with regulation IEC61000 (or its corresponding updates) will be requested as acceptance request of production batches.			
6.3.27	Information technology equipment. Radio disturbance characteristics.	Document in proof of compliance with regulation EN55022 (or its corresponding updates) will be requested as acceptance request of production batches.			

CHARGERS CERTIFICATION					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.3.28	Restriction of Hazardous Substances	Document in proof of the RoHS certification of the charger will be requested, in case the charger is not included in the RoHS certification of the device, as acceptance request of production batches.			
6.3.29	Information technology equipment - Safety	Document in proof of compliance with regulation EN60950 will be requested as acceptance request of production batches.			
6.3.30	Electromagnetic compatibility (EMC)	Document in proof of compliance with regulation IEC61000 will be requested as acceptance request of production batches.			
6.3.31	Information technology equipment. Radio disturbance characteristics.	Document in proof of compliance with regulation EN55022 will be requested as acceptance request of production batches.			

SPARE PARTS

SPARE PART	Estimated percentage of manufacturers faults	Observations (*)
Charger		
Screen		
Battery		
Motherboard. All motherboards sent as Spare Parts shall be delivered with the latest version of the firmware specified by Ceibal. Besides, in motherboards corresponding to Window devices, the license should also be loaded in origin.		
Charger		
...		
...		
...		

(*) Specify if the origin spare part includes other parts of the device. For example, motherboard with/ without integrated peripheral devices, etc. In the case of the boards, indicate if the spare parts contain accessories as: diverters, pads, panels, insulation or similar.

6.4. Motherboards test bench – Mandatory quote

TEST BENCH OF MOTHERBOARDS					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.4.1	TEST BENCH OF MOTHERBOARDS	This device may be connected to the motherboard and allows the diagnosis of the following peripherals: Screen, battery and charger, WiFi, audio and cameras			
		Accessories: the test bench shall be delivered with all the accessories that are necessary for the connection of			

		peripherals.			
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6.5. Security system – Optional quote

MANDATORY REQUIREMENTS		Complies		SPECIFICATIONS AND OBSERVATIONS
		Yes	No	
6.5.1	Operation in Windows 10 and Ubuntu 18.04			
6.5.2	Blocking and theft report and/or before expiration of term of use.			
OPTIONAL REQUIREMENTS				
6.5.3	At least two user levels with different privileges, for example, common user and administrator user.			
6.5.4	Identification of a device through a unique identification that may be connected to the series number described in 6.3.13.			
6.5.5	Notice to the final user about the security status of the device, for example, expiration date of the security certificate.			
6.5.6	Allow unblocking through a web service that will be consumed from Ceibal's portal.			

The necessary infrastructure must be specified (or it must be indicated if it is a SaaS system) to support the following client volume stripes:

Up to 10.000

between 10.001 and 50.000

between 50.001 and 100.000

more than 100.000

6.6. Management console for Windows devices – Optional quote

DESIRABLE REQUIREMENTS		COMPLIES		SPECIFICATIONS AND OBSERVATIONS
		YES	NO	

6.6.1	MANAGEMENT CONSOLE OF DEVICES	Installation of applications			
		Sends patches and updates			
		Blocking of functions			
		Multiplatform (Windows, Linux, Android)			

7. TECHNICAL ASSESSMENT CRITERIA

The assessment of the technical offer includes the following criteria for the assessment of the devices:

- Assessment of background
- Assessment of compliance with requirements
- Assessment of samples:
 - Assessment of performances
 - Assessment of user experience
 - Assessment of maintenance

7.1. Assessment of background

The following shall be assessed:

- Background of the factory. Ceibal may request a visit to the factory during the bid assessment process.
- Background of the bidder.

7.2. Compliance with mandatory requirements

All offers that do not meet the mandatory requirements set forth in the corresponding category of section 6. REQUIREMENTS shall be dismissed.

7.3. Assessment of samples

7.3.1 Performance and experience of user

The hardware performance and the global use experience of the device shall be assessed. The assessed aspects are: camera, definition of screen, audio, video, Wi-Fi (throughput and roaming), response of the device to the interaction with the user, (swipe, scroll, physical buttons, transition between screens, etc.), autonomy of the device regarding battery, reading/writing in memory, CPU performance, among others.

7.3.2 Maintenance

The maintenance is an essential aspect in the life cycle of the device, having important consequences in the effective procedures of repair and its associated costs, and in the availability timings of the device when in hands of the final user.

The maintenance assessment analyses the adaptation of the device to the user and to the characteristics of the support device offered by Ceibal, and the quality of the documentation associated to the maintenance that is required in section 2.2 DOCUMENTATION, for instance, description of the disassembling procedures, specification of compatibility of motherboards if any, and the procedures for the installation and setup of the firmware and operating system. Besides, the maintenance of the devices also requires the submission of additional documentation, which will be requested in the moment of production of devices (BOM, Exploded-view drawing, schematic, etc.)

As overall characteristics, we are looking for a robust and easy to repair device, both regarding the time the repairing takes and the technical complexity.

The following are some of the most relevant aspects to be assessed:

Hardware test

The requirement 6.3.12 is a desirable requirement that adds value to the repair process. Ceibal seeks for an application or feature, at a software or firmware level, that facilitates the diagnosis of the peripheral components of the device in a simple and controlled way. Some of the expected characteristics of this tool are detailed below:

- Features:
 - Sequential mode where all Tests are executed
 - Manual mode which allows the execution of a specific Test
 - By the end of each Test it allows the technician to decide if the result is acceptable or not
 - It allows to skip Test or go back to previous one manually
 - Have a LOG with the results of all Tests.
- Tests:
 - Keyboard Test: It allows the operation verification of the activation of all the keys of the keyboard
 - Bluetooth Test: Activates Bluetooth and recognizes nearby devices
 - Wi-Fi Test: Activates Wi-Fi, recognizes nearby access points and connects to it
 - Display Test: It shows the sequence of colors and patterns in full screen to detect image flaws
 - Audio Test: It allows the verification of the following components:
 - Speakers
 - Headphones
 - Microphone
 - Backlight Test: It shows a variation in the brightness of the screen
 - Touchpad and buttons Test: It enables to verify the operation, action range and sensitivity of the touchpad as well as the activation of both buttons of the mouse.
 - Camera Test: Activates the camera(s) allowing to take and save a picture
 - Battery Test: It displays the relevant information to get to know the health of the Battery. Some parameters are:
 - Tension
 - Level and status of charge or discharge
 - Current capacity and design capacity
 - Current flow from and to the battery
 - Test of SD card and USB ports: Verifies correct read/write in removable media
 - Suspension Test: Verifies the activation of the sensors of detection of the lid closing of the device
 - Storage Test: Verifies the correct read and write in the Internal Disk
 - Information of the device: Displays manufacturing information of the device, such as:
 - Name of the device
 - Firmware version
 - Series number
 - Flash Test (if applicable to model): It enables the activation of the LED used as camera flash

Firmware customization

Flexibility for setting up parameters of BIOS/UEFI, for instance, through an administration platform provided to the firmware provider.

Presence of internal battery

Independent power source to preserve certain manufacturing data, even in the case of discharge, which loss may affect the regular operation of the device.

Assembly of fragile modules

Easy disassembling of fragile modules, for example, screen, internal battery, keyboard, antenna, etc. to minimize the breaking risk. It is desirable that the assembly of these modules is not made with adhesive materials.

Assembly and disassembly complexity

Design that enables a simple assembly and disassembly process, with minimum risks on the components which are renewed and replaced. For instance, the following considerations contribute to making the process easier:

- Presence of guides for the conduction of internal wires, avoiding the use of adhesive tapes.
- Little diversity and easily identifiable screws, for instance, through colour codes and/or printing of the size of the screw in PCB.
- Modules: design that enables the removal and replacement of modules with no need of removing other modules.

Screw Anchor

A robust screw anchor that support the wear of multiple removals.

Security

Design that prioritizes the security of the user. For example, security mechanisms if the temperature of the battery is exceeded, protections to avoid the scattering of splinters if the screen is broken, possibility of accessing the cells of the battery, etc.

Length of internal wires

Appropriate length of internal wires so as to avoid unnecessary tensions in the connection to the motherboard or excessive dispersion of wires in the interior of the device.

Internal Connectors

Connection of peripheral devices to the motherboards through removable connectors and NOT through welded devices, since it would complicate the repair processes. The equipment with welded peripheral devices may only be repaired in a centralized way, which prevents the type of distributed repairs method implemented by Ceibal.

External Connectors

Users will have access to the external connectors, so it is important for such connectors to be robust enough to resist the external pressure. Some aspects to be considered are:

- Connectors that are totally contained in the interior of the device to avoid more pressure than needed, or even reinforced by the plastic of the case or supports for such purpose.
- Connectors in independent modules which are connected to the motherboard, so in case of break of a connector, it is not necessary to remove and replace the whole motherboard.
- Small SMD connectors such as micro USB, the audio connectors, the micro HDMI, etc., with four anchor points in the Motherboard.
- Assembled connectors in board-cut display that makes contact with the motherboard on the rear part of the connector, which provides an additional support point to the connector.
- Reinforced structure of the metallic body of micro USB connectors, for example, through welding of point or through its constructive design.
- Reversible connectors, such as micro USB type C.

Touchpads of laptops

Independent left and right buttons of touchpad.

Battery

External batteries of laptops for them to be replaced without need of disassembling the device. At the same time, the module should be fixed to the external case of the

device so that the user finds its removal difficult. It is desirable that connections are through screws instead of mechanical solutions.

8. APPENDIX I: Quote charts

CATEGORY I: UBUNTU LAPTOPS				
	MODEL	VOLUME	UNIT PROCE, US\$ CIF MVD	OBSERVATIONS
LAPTOP		Up to 10.000		
		between 10.001 and 50.000		
		between 50.001 and 100.000		
		More than 100.000		

CATEGORY II: DUAL BOOT UBUNTU/WINDOWS (*) LAPTOPS				
LAPTOP 64GB STORAGE	MODEL	VOLUME	UNIT PRICE, US\$ CIF MVD	OBSERVATIONS
		Up to 10.000		
		between 10.001 and 50.000		
		between 50.001 and 100.000		
		More than 100.000		
LAPTOP 128 GB STORAGE		Up to 10.000		
		between 10.001 and 50.000		
		between 50.001 and 100.000		
		More than 100.000		
OPTIONAL REQUIREMENTS			UNIT PRICE, US\$	OBSERVATIONS
6.2.4	AVAILABILITY OF CHIP TPM 2.0			

(*) To quote this device consider Letter of Eligibility of the program Shape the future of Microsoft.

PRODUCT: TEST BENCH OF MOTHERBOARDS (CIF MVD) – MANDATORY QUOTE				
REQUIREMENT		VOLUME	UNIT PRICE US\$ CIF MVD	OBSERVATIONS
6.4.1	Test bench of motherboards	Up to 10		
		between 10 and 30		
		More than 30		
	Accessories for peripheral connection (specify)	Specify volume		

PRODUCT: ANTI-THEFT SECURITY SYSTEM- OPTIONAL QUOTE			
REQUIREMENT	VOLUME	PRICE, US\$	OBSERVATIONS

6.5	Anti-theft Security System.	Specify the licensing scheme per volume. Desirable: fix rate as per the following:		
		Up to 10.000		
		between 10.001 and 50.000		
		between 50.001 and 100.000		
		More than 100.000		

PRODUCT: MANAGEMENT CONSOLE –OPTIONAL QUOTE				
REQUIREMENT		VOLUME	PRICE, US\$	OBSERVATIONS
6.6	Management Console	Specify the licensing scheme per volume. Desirable: fix rate as per the following:		
		Up to 10.000		
		between 10.001 and 50.000		
		between 50.001 and 100.000		
		More than 100.000		

SPARE PARTS – MANDATORY QUOTE		
SPARE PART	UNIT PRICE, US\$ FOB ORIGIN	MINIMUM BATCH
Keyboard		
Screen		
Battery		
MOTHERBOARDS. All Motherboards sent us spare parts shall be delivered with the latest firmware version specified by Ceibal. Besides, in		

the motherboards corresponding to Window devices, the license should also be charged in origin.		
Charger		
...		
...		

The prices quoted for the spare parts shall be effective for 12 months as from the date of the award.

SPARE PARTS – OPTIONAL QUOTE		
<p>This quotation mode of Spare parts is optional. It aggregates value to the repair service of Ceibal since it will be adapted to the evolution of Spare parts demand. In case of being awarded, the operation shall have the following characteristics:</p> <ol style="list-style-type: none"> 1. Ceibal Centre shall acquire the amount of SPARE PARTS esteemed to cover the first 6 months of operations. 2. According to the evolution of the demands, which shall be informed monthly, Ceibal Centre will buy the amount of Spare Parts considered sufficient to cover the following 3 months of operations. This batch should be delivered in a Port or Free Zone of Montevideo, in a maximum term of 45 days. 3. Step 2 will be repeated depending on the evolution of the demand. While the operations are working, a frequency of request of parts of 3 months approximately is expected. 		
SPARE PART	UNIT PRICE, US\$ FOB ORIGIN	MINIMUM BATCH
Keyboard		
Screen		
Battery		
Motherboard. All motherboards sent us SPARE PARTS shall be delivered with the latest version of the firmware specified by Ceibal. Besides, in the motherboards corresponding to Windows devices, the license shall also be loaded in origin.		
Charger		
...		
...		
...		

The prices quoted for the spare parts shall be effective for 12 months as from the date of the award.

9. APPENDIX II: Confidentiality and data protection

The awarded company is expressly obliged to keep under strict confidentiality all the information processed or used while its bond with Ceibal lasts. Confidential information includes, among other things, for instance, the following: all commercial strategies, plans and procedures, proprietary information, software, tools, process, images, personal data, methodology, commercial information and secrets, and other Ceibal's information and material, as well as that of the students, beneficiaries, teachers, study centers, that may be obtained by the Company from any source or that may be developed as a consequence of the agreement hereof.

If the bidder has access to personal data, it shall inform in its bid where it shall host such data as well as its data security and privacy policy. In this case, it agrees to treat the personal data it may have access to in accordance with Law number 18.331 of August 11th, 2008, and Decree number 414/2009 of August 31st, 2009, only in the rendering and within the frame of the hired service, and shall not be entitled to use it for a different purpose nor for its own benefit, whether for free or for valuable consideration, nor assign, communicate or transfer it to third parties, unless previous authorization by Ceibal Centre.

In no case shall the access to personal data be interpreted as an assignment or authorization for its free use by the selected bidders.

These are obliged to adopt the necessary security measures so as to guarantee the security and confidentiality of the personal data and avoid the adulteration, loss, and non-authorized search or treatment, as well as to identify information leaks.

If personal data is hosted, even temporarily, outside the national territory, the Company must secure that the importer is located in countries that comply with appropriate levels as per European standards of data protection, according to the Directive 95/46/CE of the European Parliament and Board, and its amendments, elaborative and supplementary regulations. Otherwise, the Company agrees to seek the consent of the data's holder to be able to make the transfer to a non-adequate territory, or to make sure the importer complies with the regulations of the Privacy Shield, has subscribed standard contractual clauses with the exporter or has registered the Code of Conduct, with the corresponding authorization for international data transfer obtained from the Personal Data Control and Regulatory Entity, in these last two cases.

Upon termination of this agreement, bidders agree to return or delete in all its systems and physical and logic files, whether own or hired to third parties, all accessed personal data obtained or treated by virtue of this agreement, as well as the associated metadata, if applicable,

Personal data refers to all information of any kind making reference to natural persons or legal entities, determined or to be determined, including any kind of numeric, alphabetic, graphic, photographic, acoustic or any other type of information that refers directly or indirectly to them, as per dispositions of Article 4, Law no. 18.331 and articles 1 and 4 of Decree no. 414/009.



Plan Ceibal