PUBLIC INTERNATIONAL TENDER

LAPTOPS

TECHNICAL ANNEX

1   Call Aim

Centro Ceibal calls for a public international tender for the acquisition of up to 100,000 laptops for delivery to beneficiaries of the Plan. The tender is divided into two categories, the bidder may quote in a single category or in both:

1   Laptops with 64GB of storage
2   Laptops with 128GB of storage

The bidder must be able to provide dual boot computers, with Windows 10 and Ubuntu operating systems. Centro Ceibal will define prior to the development of the software image of the equipment, if the image will include both operating systems or if it will only include Windows. The Windows partition of the offered computers must be manageable through the Microsoft Intune tool of the Ceibal tenant.

The bidder must separately quote the development and certification of an additional software image, which Ceibal may request due to changes in requirements or due to the evolution of operating systems. This image is not the one that will be shipped with the device at the factory, but rather a **maintenance software image**. See *Annex I: Price tables.*

The bidder must quote the equipment in maritime shipment mode (CIF MVD) and the spare parts in FOB Origin mode.

The offer must be submitted in accordance with the specifications in section 2. OFFER. Centro Ceibal reserves the right to reject an offer that is not presented in accordance with this pricing scheme.

All products purchased from the bidder and / or all the services provided by the bidder are governed by the confidentiality and data protection considerations specified in *Annex II: Confidentiality and data protection.*

2 Offer

A maximum of 2 models can be offered per category. All documentation submitted must be segmented **identifying each product by its corresponding model in the technical and economic offers.**

1 Presentation and way to quote

The technical offer will be included in a file with a password, this file will be presented segmented into the following folders:

1. Folder with factory background specification. It should be detailed:
   - Factory that will produce the devices offered.
   - General production volume of the factory in the last 12 months.
   - Production volume of laptops at the factory in the last 12 months.
   - Client list.
   - Average daily production of laptops.
   - Slot time to start production (acquisition of raw material and preparation of production line).
2. Folder with background of the bidder. It should be detailed:
   - Background of provision of similar consumer electronic devices in the last 12 months.
   - Background of educational projects in which you have participated.
   - History of work with the factory that will produce the devices indicated in 1., detailing time of joint work, projects and volume of devices.
   - List of clients and respective contacts,
3. Folder with all the tables of section 6. REQUIREMENTS completed, for each product offered.
4. Folder with the documentation requested in section 2.2 DOCUMENTATION for each laptop model offered.
5. Folder with warranty specifications as requested in section 3. WARRANTY.
6. Folder with the specification of delivery times as requested in section 4. DELIVERY TERM AND CONDITIONS.
7. (Optional) Folder with the complementary technical information that the bidder considers pertinent to provide.

The economic offer will be presented segmented in the following folders, **in a separate file and with a password:**

1. Folder with the tables completed in *Annex I: Price tables* for the corresponding device category.
2. (Optional) Folder with the price of additional guarantee, if offered.
3. (Optional) Folder with additional quotes to those specified above, if applicable.

2 Documentation

The documentation that must be included in the technical offer documentation folder, for each model offered, is the following:

DOCUMENTATION		
MANDATORY WITH THE OFFER		
2.2.1	TECHNICAL SPECIFICATIONS	Technical specifications of each model offered.
2.2.2	DISASSEMBLY TECHNICAL DOCUMENTATION	Technical document detailing the complete disassembly procedure for the device.
2.2.3	MOTHERBOARDS COMPONENT SUPPLY	Indicate if the bidder can provide the motherboard components that will be detailed in the BAI (see documentation requirement 2.2.12).
2.2.4	TECHNICAL DOCUMENTATION TO INSTALL AND CUSTOMIZE FIRMWARE AND OPERATING SYSTEM	Technical document that details tools and procedures to customize and install the firmware and operating system of the device. Specify the type of modifications that can be made at the Firmware level. As a reference, for the development of the software image, Plan Ceibal currently uses Clonezilla and Windows Configuration Designer.
2.2.5	INSTALLATION OF OPERATING SYSTEM IN SEVERAL EQUIPMENT	Technical document that details the tool and procedure for installing the operating system on several computers simultaneously, for example, through a removable device or a PC. Alternatives that facilitate operations and minimize the use of external resources are preferred.
2.2.6	SERIAL NUMBER CONFIGURATION	Serial number configuration tool and procedure.
2.2.7	MOTHERBOARDS TEST BENCH	Document detailing the characteristics of the motherboard test bench, including photographs.
OPTIONAL WITH THE OFFER		
2.2.8	WIFI ALLIANCE CERTIFICATIONS	WiFi Alliance certifications of the network card offered.

The following documentation is mandatory with each shipment of equipment, or with each change of hardware, as applicable:

DOCUMENTATION
MANDATORY WITH EACH SHIPMENT and / or HARDWARE CHANGE, as applicable

2.2.9	RoHS CERTIFICATE	RoHS standard compliance certificate. **(It is NOT required to present the detailed documents with the test protocols applied).**
2.2.10	FCC CERTIFICATE	Certificate of compliance with FCC standard. **(It is NOT required to present the detailed documents with the test protocols applied).**
2.2.11	BILL OF MATERIALS (BOM)	Worksheet with all the hardware components that make up the device, each with a code that identifies it, including the case and any other individual component that can be replaced in case of failure.
2.2.12	SCHEMATICS, LAYOUT and BAI	Schematics, layout and board assembly information (BAI) of the motherboard in digital format. This information will be delivered once production has started (or at the latest prior to the first shipment) and each time the successful bidder notifies a hardware change.
2.2.13	EXPLODED VIEW DRAWING	Technical drawing of the assembly and relationship between all the atomized parts of the equipment, each one identified with a code. This information will be delivered once production has started (or at the latest prior to the first shipment) and each time the successful bidder notifies a hardware change.
2.2.14	DATA SHEETS	Data sheets of main components of the device such as battery, screen, camera, etc., and of main components of the motherboard such as integrated circuits and connectors.
2.2.15	BATTERIES MSDS	Battery Material Safety Data Sheet (MSDS).
2.2.16	CHARGER: RoHS CERTIFICATE	Certificate of compliance with the RoHS standard of the charger, in case it is not included in the RoHS certificate of the device. **(It is NOT required to present the detailed documents with the test protocols applied).**
2.2.17	CERTIFICATES EN60950	Certificate of compliance with standard EN60950 (or its updates), Information technology equipment - Safety, laptop and charger. **(It is NOT required to present the detailed documents with the test protocols applied).**
2.2.18	CERTIFICATES IEC61000	Certificate of compliance with standard IEC 61000 (or its updates), Electromagnetic compatibility (EMC), laptop and charger. **(It is NOT required to present the detailed documents with the test protocols applied).**
2.2.19	CERTIFICATES EN55022	Certificate of compliance with standard EN55022 (or its updates), Information technology equipment Radio disturbance characteristics, laptop and charger. **(It is NOT required to present the detailed documents with the test protocols applied).**
2.2.20	DEVICE SHEET	Device information sheet (see description in this section).
2.2.21	LOGISTICS SHEET	Logistics information sheet (see description in this section).

The information sheets required with each shipment are described below:

- DEVICE SHEET (Requirements 2.2.20)
  - Part number.
  - Serial number.
  - Pallet number / master box number in which the device is shipped.
  - MAC addresses of all network cards the device has (for example, WLAN, Ethernet, Bluetooth).

- Part number and serial number of the main components (minimum: motherboard, display and battery).
- Identifier obtainable by software with the method specified by the bidder.
- HASH of the equipment obtained at the factory (the hash is an alphanumeric code associated with the hardware, to obtain it you must access the equipment and execute a command once the software image is installed. The hash is necessary for the equipment to be managed by Intune. Ceibal will provide the pre-production procedure).

- LOGISTICS SHEET (Requirement 2.2.21)
  - Individual box measurements.
  - Individual box weight.
  - Master box measurements.
  - Master box weight.
  - Number of individual boxes per master box.
  - Number of master boxes per pallet.
  - Pallet height.

3   Samples

At the time of the presentation of the offers, **TEN** identical samples of each model of laptop offered in each category must be delivered, with their chargers, with Windows operating system **(regardless of whether it is the same model with different storage capacity as the only difference in hardware).**

In exceptional cases and when there are justified reasons in the opinion of Ceibal, the bidder may defer the delivery of samples for a reasonable period that Ceibal will evaluate.

A fundamental part of the technical evaluation will be carried out on these samples (see section 7. TECHNICAL EVALUATION CRITERIA). **The specifications and performance of the final product cannot be less than the sample. This aspect will be verified in the quality controls that determine the acceptance of the product.**

Some tests to be carried out with the samples may result in their destruction, and those that are not destroyed may be returned in different conditions with respect to which they were delivered. The bidder will have 4 weeks from the award to pick the submitted samples. Once the previous term has expired without having withdrawn them, Centro Ceibal may freely dispose of them, without the right to claim on the part of the bidder.

For the delivery of samples, they must be delivered to the *Proveeduría de Ceibal* (Av Italia 6201, LATU, Los Ceibos building, CP 11500). The hours of attention to the public due to the health emergency are Tuesdays and Thursdays, from 10 a.m. to 4 p.m. In case of not being able to go during these hours, we request to previously coordinate with Ceibal at the email **almacenes@ceibal.edu.uy**, the day and time for the delivery of the samples.

The following warranty conditions are mandatory:

3   Dead on Arrival

Warranty for replacement of devices with failure due to DOA for a period of 90 days from arrival: 5 laptops every 1000.

3   Systemic failures

Ceibal may request from the successful bidder the necessary spare parts or the replacement of equipment in the event that a systemic failure attributable to the design or manufacture of the equipment is detected. The costs derived from the execution of this guarantee are the sole responsibility of the supplier.

In the event that the bidder presents **additional** guarantees, they must be detailed in their technical proposal. If the additional guarantee conditions proposed by the bidder imply additional costs, these must be presented in the economic offer, quoted separately.

The bidder will guarantee that the products supplied under the contract are new, complete, unused and free from defects attributable to design, materials, manufacture, storage conditions (packaging, appropriate temperature and humidity), transfer or any other act or omission of the bidder that could manifest itself on the occasion of the normal use of the products under the prevailing conditions in the country.

4   Delivery time period and conditions

4   Delivery time period

TWENTY identical samples of the awarded model must be submitted for repair training before February 1, 2022. **These 20 samples are not part of the awarded lot and are at the supplier's expense.**

The following maximum delivery time period is desirable:

- ETA of 50% of the awarded lot: 120 calendar days after the adjudication resolution is communicated.

- ETA of the remaining 50% of the awarded lot: within 30 calendar days after delivery of the first 50%, or April 15, 2022, whichever occurs before.

These deadlines include all product development, production, and shipping.

In case of not being able to comply with these maximum deadlines, the bidder must specify the delivery time period in his offer. **The same delivery time period applies for both laptops and spare parts.**

4   Delivery conditions

All devices sent to Ceibal must be made up of the same components. In the event that this cannot be fulfilled, the successful bidder must notify Ceibal in writing within a period of no less than 60 days and Ceibal must validate the new BOM.

The successful tenderer must deliver the devices in compliance with the following specifications:
- Each pallet must be labeled with the following information:
  - Device model / lot / batch **(pallets containing more than one device model will not be accepted).**
  - Pallet number / total pallets in the lot.
  - Number of master boxes on pallet.
  - List of master boxes that make up the pallet.
- Each master box must be labeled with the following information:
  - Device model / lot / batch.
  - Number of master boxes / total of master boxes in the batch.
  - Serial number (barcode and alphanumeric) of each device in the master box.
  - Product description
- Each individual box should be labeled with the following information:
  - Device model.
  - Serial number (barcode and alphanumeric) of the device.

The design of each individual box and each master box must be customized according to specifications that will be agreed between Centro Ceibal and the successful bidder.

Centro Ceibal may request the inclusion of a printed brochure with recommendations for use and care of the equipment in each individual box.

5   Quality controls

Centro Ceibal will carry out three quality controls on the awarded products that may partially or totally reject the inspected lots. These three inspections are:

1. Inspection at origin prior to shipment
2. Validation of *golden samples* that the successful bidder will send to be evaluated at Centro Ceibal (10 pieces of equipment from each batch produced, sent by air freight at the bidder's expense).
3. Final inspection in Ceibal after receiving the shipment.

Centro Ceibal, or a representative that it designates, may visit the factory before and / or during the production of the batches for Ceibal, prior coordination between the parties and independent of quality controls. Centro Ceibal may also request a visit to the manufacturer to work together during the software image development process.

6 Requirements

6.1 Laptops

HARDWARE					
MANDATORY REQUIREMENTS			COMPLIES		**SPECIFICATIONS AND OBSERVATIONS**
			YES	NO	
6.1.1	PROCESSOR	Brand: Intel. Minimum: Dual core .64 bits. Minimum Reference Performance: Celeron N4000 (cpubenchmark.net)			
6.1.2	SCREEN	Size: 11.6 ''. Specify whether the screen has a matte or glossy surface.			
6.1.3	MEMORY RAM	Minimum: 4GB DDR3. Specify if the component is onboard or removable.			
6.1.4	INTERNAL STORAGE	**Category I:** 64GB. Specify the connection interface of the card to the motherboard (mPCle, M.2, SATA) and indicate if the component is onboard or removable.			
		Category 2: 128GB. Specify the connection interface of the card to the motherboard (mPCle, M.2, SATA) and indicate if the component is onboard or removable.			
6.1.5	MULTIMEDIA	Headphone output and external microphone input through the same connector.			
		Built-in microphone and speakers.			
		Camera: 1MP minimum.			
6.1.6	INPUT METHODS	QWERTY keyboard with distribution in Spanish language.			
		Touchpad.			
6.1.7	PORTS	USB: Minimum 2 ports. At least one USB 3.0.			

		HDMI video output.			
6.1.8	CONNECTIVITY	Minimum: 802.11n 1x1 dual band network card (2.4GHz and 5GHz). WPA2 Personal / Enterprise security. Specify connection interface of the card to the motherboard.			
		Bluetooth			

FIRMWARE					
MANDATORY REQUIREMENTS			**COMPLIES**		**SPECIFICATIONS AND OBSERVATIONS**
			YES	NO	
6.1.9	ACTIVATED SECURE BOOT	The UEFI Firmware must have the Secure Boot module activated, with Ceibal signatures that will also be present in the software image.			
6.1.10	SEALED	Firmware must not allow modification of Secure Boot settings.			
6.1.11	FIRMWARE CONFIGURATION	The firmware must be configurable (except for the Secure Boot configuration). In particular, it is of interest to disable the possibility of establishing any boot password and the possibility of establishing any password for access to the mass storage medium.			
6.1.12	SERIAL NUMBER RECORDING SOLUTION	The bidder must provide a solution that allows a specific serial number to be recorded in a motherboard repair process.			

SOFTWARE					
MANDATORY REQUIREMENTS			**COMPLIES**		**SPECIFICATIONS AND OBSERVATIONS**
			YES	NO	
6.1.12	OPERATING SYSTEM	Windows 10 and Ubuntu 20.04 LTS.			
6.1.13	MICROSOFT INTUNE COMPATIBILITY	The equipment must meet the necessary firmware, software or hardware requirements, so that the Windows partition is managed through the Microsoft Intune tool of the Ceibal tenant			
6.1.14	LANGUAGE	Operating system and all its interfaces and configuration options in Spanish.			
6.1.15	CUSTOMIZATION AND INSTALLATION TOOLS	The bidder must deliver the tools detailed in documentation requirements 2.2.4 and 2.2.5 for firmware and operating system customization, and for operating system installation on various computers.			
6.1.16	SOFTWARE IMAGE DEVELOPMENT	The bidder must assist Ceibal throughout the process of elaboration, configuration and customization of the software			

			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
		image signed by Ceibal. As an example: assistance with Clonezilla and / or Windows Configuration Designer.			

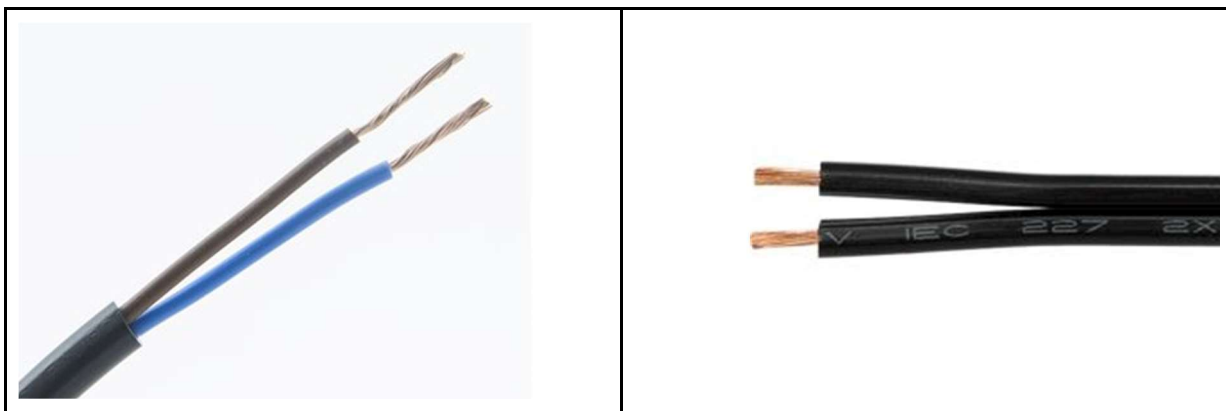|			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
	DESIRABLE REQUIREMENTS		YES	NO	
6.1.17	HARDWARE TEST	Software or firmware tool that allows verification of the device's integrated peripherals and ports. This tool must be available in Spanish and / or English. For details of the characteristics sought, see section 7: Technical evaluation criteria.			

		LOGISTICS			
	MANDATORY REQUIREMENTS		COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.1.18	CEIBAL LOGO AND FANTASY NAME OF THE MODEL	Ceibal will specify the logo and fantasy name of the model, which must be printed on the housing by laser, silkscreen or another printing method, labels will NOT be accepted. This print must meet the following durability criteria:			
		Clearly visible on housing.			
		Indelible before the application of alcohol.			
		Not removable when sticking and peeling packing tapes.			
6.1.19	SERIAL NUMBER and BARCODE	Unique Serial Number (SN) and corresponding barcode printed on housing by laser, silkscreen or other printing method. The same considerations apply as for requirement 6.1.18 CEIBAL LOGO AND FANTASY NAME OF THE MODEL. The barcode must have sufficient contrast to be read by barcode readers. Labels will NOT be accepted.			
		The serial number must be obtainable by software through a procedure that the bidder will indicate.			
		The serial number obtainable by software must be configurable using a tool and procedure that the bidder will specify. This requirement is necessary so that the serial number printed on the housing and the serial number obtained by software match on a machine after a repair in which the motherboard was changed (See requirement 2.2.6 SERIAL NUMBER CONFIGURATION)			
6.1.20	PARTS IDENTIFICATION	The following components must have a barcode or QR code that allows the part number to be scanned (applies both to the parts included in the equipment and to individual spare parts):			
		Battery			
		Motherboard and Screen. Additionally, they must have a similar label or engraved by laser or silkscreen (with scannable codes)			

		with the part number and serial number information.			
6.1.21	ECO FRIENDLY PACKING	The design of the packing must be ecofriendly, cardboard and biodegradable nylon.			

CHARGERS					
MANDATORY REQUIREMENTS			**COMPLIES**		**SPECIFICATIONS AND OBSERVATIONS**
			YES	NO	
6.1.22	TYPE OF CONNECTOR	Europlug (CEE 7/16).			
6.1.23	INSULATION IN 220v PINS	The connection pins to the electrical network must have insulation at the base.			
6.1.24	SEALED CHARGER	The charger can only be opened by a destructive process. It must not have screws that allow it to be opened by the user.			
6.1.25	PINS REMOVAL FORCE	The pins can only be removed from the body of the charger if a force greater than 40kgf is exerted.			
6.1.26	CEIBAL LOGO	Ceibal will specify the model's logo and fantasy name. In addition to this information, the production lot and charger electrical specifications must be printed on the housing by laser, silkscreen or other printing method, labels will NOT be accepted. The same considerations apply as for requirement 6.1.18 CEIBAL LOGO AND FANTASY NAME OF THE MODEL.			
6.1.27	REINFORCED DC CABLE	The DC cable must be reinforced, see description below.			

Description Requirement 6.1.27: REINFORCED DC CABLE:

Reinforced cable (complies with mandatory requirement)	Cable NOT reinforced (**DOES NOT comply** with the mandatory requirement)

LAPTOP CERTIFICATIONS					
MANDATORY REQUIREMENTS			**COMPLIES**		**SPECIFICATIONS AND OBSERVATIONS**
			YES	NO	
6.1.28	Restriction of Hazardous Substances	Documentation proving the RoHS certification of the device or all its components will be required as a requirement for acceptance of production batches.			
6.1.29	Federal Communications Commission Declaration of Conformity	Documentation supporting FCC certification will be required as a requirement for acceptance of production batches			
6.1.30	Information technology equipment - Safety	Documentation proving compliance with the EN60950 standard (or its updates) will be required as a requirement for acceptance of production batches			
6.1.31	Electromagnetic compatibility (EMC)	Documentation proving compliance with the IEC61000 standard (or its updates) will be required as a requirement for acceptance of production batches			
6.1.32	Information technology equipment. Radio disturbance characteristics.	Documentation proving compliance with the EN55022 standard (or its updates) will be required as a requirement for acceptance of production batches			

CHARGERS CERTIFICATION					
MANDATORY REQUIREMENTS			**COMPLIES**		**SPECIFICATIONS AND OBSERVATIONS**
			YES	NO	
6.1.33	Restriction of Hazardous Substances	Documentation proving the RoHS certification of the charger will be required, in case the charger is not included in the RoHS certification			

		of the device, as a requirement for acceptance of production batches.			
6.1.34	Information technology equipment - Safety	Documentation proving compliance with the EN60950 standard (or its updates) will be required as a requirement for acceptance of production batches.			
6.1.35	Electromagnetic compatibility (EMC)	Documentation proving compliance with the IEC61000 standard (or its updates) will be required as a requirement for acceptance of production batches.			
6.1.36	Information technology equipment. Radio disturbance characteristics.	Documentation proving compliance with the EN55022 standard (or its updates) will be required as a requirement for acceptance of production batches.			

SPARE PARTS		
Spare Part	Estimated percentage of factory failures	Observations (*)
Keyboard		
Screen		
Battery		
Motherboard. **All motherboards shipped as spare parts must be delivered with the firmware version specified by Ceibal. In addition, on motherboards the Windows license must also be loaded at the source.**		
Charger		
...		
...		
...		

(*) Specify whether the source spare part includes other parts of the device. For example, motherboard with / without integrated peripherals, etc. In the case of the boards, indicate if the spare parts contain accessories such as: heat sinks, pads, insulating sheets or similar.

7   Device technical evaluation criteria

The evaluation of the technical offer includes the following device evaluation criteria:

- Background screening.
- Evaluation of compliance with requirements.
- Evaluation of samples:
    - Performance evaluation
    - User experience evaluation
    - Maintenance evaluation
- Evaluation of compliance with software requirements.

1   Background Evaluation

The evaluation of the technical offer includes the following device evaluation criteria:

- Background evaluation. It will be evaluated:
    - The Factory background
    - The Background of the bidder
- Factory visit. Centro Ceibal may request a visit to the factory that the bidder specifies in his offer. The objective of this visit is to check the capacity of the factory to meet the volume of production in quality and deadlines. When presenting itself, the bidder guarantees that the factory will allow access to Ceibal, or to a representative designated by it, so that the corresponding evaluation can be carried out, if Ceibal requests it. For this evaluation it will be needed:
    - Free access to the company's manufacturing facilities and offices.
    - Free access to take photographic and videographic records of the facilities, both inside and outside the factory buildings.
    - Free access to documentation linked to current quality and management certificates.
    - Free access to documentation related to legal records of the company.

2   Compliance with mandatory requirements

Any offer that does not meet any of the mandatory requirements requested in the corresponding category of section 6. REQUIREMENTS will be discarded.

3   Sample Evaluation

3   Performance and user experience

Hardware performance and overall device usage experience will be evaluated. The evaluated aspects are: camera, screen, audio, video, WiFI, response of the device in interaction with the user, autonomy of the device in battery operation, disk reading / writing, CPU performance, among others.

1.3   Maintenance

The maintenance evaluation analyzes the suitability of the device for the user and the characteristics of the support service provided by Ceibal, and the quality of the documentation associated with maintenance requested in section 2.2 DOCUMENTATION, such as, for example, a description of the maintenance procedures. disassembly and procedures for installation and configuration of firmware and operating system. In addition, the maintenance of the equipment also requires the delivery of additional documentation that will be requested at the time of the production of the devices (BOM, Exploded-view drawing, schematics, etc.)

As general characteristics, a robust and easy-to-repair device is sought, both in terms of the time it takes to repair and its technical complexity.

Among the aspects to be evaluated, the following stand out:

Firmware customization

Flexibility to configure BIOS / UEFI parameters, for example, through a management platform provided by the firmware vendor.

Presence of internal battery

Independent power supply to maintain certain factory data, even when the battery is discharged, the loss of which may affect the normal operation of the device.

Fragile module assembly

Easy to disassemble fragile modules, for example screen, internal battery, keyboard, antennas, etc., in order to minimize the risk of breakage. It is desirable that the assembly of these modules is not done with adhesive materials.

Disassembly and assembly complexity

Design that allows a simple assembly and disassembly process, with minimal risks on the components that are removed and replaced. For example, the following considerations contribute to the ease of the process:

- Presence of guides for the conduction of internal cables that avoid the use of adhesive tapes.
- Low diversity of screws and easily identifiable, for example, by color coding and / or printing the screw size on PCB.
- Modularity: design that allows removal and replacement of modules without the need to remove other modules.

Screw anchors

Robust screw anchors to withstand wear and tear from multiple removals.

Safety

Design that prioritizes the safety of the user. For example, safety mechanisms due to excess battery temperature. Protections to avoid splinter dispersion when the screen is broken, the possibility of accessing the battery cells, etc.

Length of internal cables

Appropriate length of internal cables in order to avoid unnecessary tension in the connection to the motherboard or excessive dispersion of the cables inside the equipment.

Internal connectors

Peripherals connection to the motherboard using removable connectors and NOT by soldering, as it makes repair processes difficult. Equipment with welded peripherals can only be repaired centrally, which makes the distributed repair modality implemented by Ceibal impossible.

External connectors

The external connectors are accessible to the user so it is important that they are robust to withstand external pressure. Some aspects to consider are:

- Connectors with correct coupling to avoid unnecessary pressure being exerted on them, and even reinforced by the plastic of the housing or supports for this purpose.
- Connectors in independent modules that connect to the motherboard, so that in the event of a connector breakage, it is not necessary to remove and replace the entire motherboard.
- Small SMD connectors such as micro USB, audio connectors, micro HDMI, etc, with at least four anchor points to the motherboard.
- Connectors assembled in a board-cut configuration that make contact with the motherboard at the rear of the connector, providing an additional point of support for the connector.
- Reinforced structure of the metal body of micro USB connectors, for example, by spot welding or by its constructive design.
- Reversible connectors, such as micro USB type C.

Touchpad

Independent left and right touchpad buttons.

Battery

External laptop batteries so that they are replaced without the need to disassemble the equipment. At the same time, the module is fixed to the outer housing of the device in such a way that it is difficult to remove by the user. For this, screw connections are preferable rather than mechanical solutions.

Hardware Test

Requirement 6.1.17 is a desirable requirement that adds value to the repair process. An application or functionality is sought, at the software or firmware level, that allows to facilitate the diagnosis of the device's peripherals in a simple and controlled way. Here are some of the features sought in this tool:

- Features:
  - Sequential mode where all the tests are executed.
  - Manual mode where it is allowed to run a specific test.
  - At the end of each test, it must allow the technician to decide if the result is acceptable or not.
  - Allows you to skip Test or go back to the previous one manually.
  - Have a LOG with the results of all the tests.
- Tests:
  - Keyboard Test: It allows the functional verification of the activation of all the keyboard keys.
  - Bluetooth Test: It Activates Bluetooth and recognize nearby devices.
  - WiFi test: It Activates WiFi, recognize nearby access points and connect.
  - Display Test: It Shows sequence of colors and patterns in full screen, to detect defects in the image.
  - Audio Test: It Allows verification of the following components:
    - Speakers
    - Headsets
    - Microphone.
  - Backlight Test: It Shows variation in screen brightness.
  - Touchpad and button test: It Allows you to verify operation, range of action and sensitivity of the touchpad, as well as the activation of both mouse buttons.
  - Camera Test: It Activates the camera (s) allowing you to take and save a photo.
  - Battery Test: It Displays the relevant information to know the health of the Battery. Some parameters are:
    - Tension
    - Level and state of charge or discharge
    - Current capacity and design capacity
    - Current flow to or from the battery.
  - SD card and USB ports test: It Checks the correct reading and writing on removable media.
  - Suspension test: It Verifies activation of the equipment's closed detection sensors.
  - Storage Test: It Checks the correct reading and writing on the internal disk.
  - Device Information: It Displays device manufacturing information, such as:
    - Name of the team
    - Firmware version
    - Serial number

    ○ Flash Test (if applicable to the model): It Allows turning on the LED used as the camera's flash

8   ANNEX I: Price Tables

LAPTOPS - MANDATORY QUOTE					
CATEGORY	MODEL	VOLUME	UNIT PRICE, SEA SHIPPING (US$ CIF MVD) INCOTERM 2010.	UNIT PRICE, AIR SHIPPING (US$ CIP MVD) INCOTERM 2010.	OBSERVATIONS
I: LAPTOPS WITH 64GB STORAGE		Up to 10.000			
		between 10.001 and 40.000			
		between 40.001 and 70.000			
		More than 70.000			
II: LAPTOPS WITH 128 GB STORAGE		Up to 10.000			
		between 10.001 and 40.000			
		between 40.001 and 70.000			
		More than 70.000			

(*) For the price of this equipment, take into account the Letter of Eligibility from Microsoft's *Shape the future program*.

DEVELOPMENT AND CERTIFICATION OF MAINTENANCE SOFTWARE IMAGE	
PRICE US$	

SPARE PARTS - MANDATORY QUOTE		
SPARE PARTS	UNIT PRICE, US $ FOB ORIGIN	MINIMUM BATCH
Keyboard		
Screen		

Battery		
Motherboard. All motherboards shipped as spare parts must be delivered with the firmware version specified by Ceibal. In addition, on motherboards the Windows license must also be loaded at the source.		
Charger		
…		
…		

9 ANNEX II: Confidentiality and data protection

The Company that is awarded the contract expressly undertakes to keep in the strictest confidentiality all the information that it processes or uses during its relationship with Centro Ceibal. Confidential Information includes, among others, by way of example, the following information: all commercial strategy, plan and procedure, proprietary information, software, tool, process, images, personal data, methodology, information and trade secret, and other information and material Ceibal, as well as the students, beneficiaries, teachers, study centers, which could be obtained by the Company from any source or could be developed as a result of this contract.

In the event that the bidder accesses personal data, they must inform in their offer where they host the data as well as their privacy and data security policy. In this case, it is obliged to process the personal data to which they have access in accordance with Law No. 18,331, of August 11, 2008 and Decree No. 414/2009, of August 31, 2009, only for the provision and in the framework of the contracted service, not being able to use them for any other purpose, nor for their own benefit, whether free or onerous, nor assign them, communicate them or transfer them to third parties, except with prior authorization from Centro Ceibal.

In no case may access to personal data be understood as an assignment or permission for its free use by the selected bidders.

Likewise, they are obliged to adopt the necessary security measures to guarantee the security and confidentiality of personal data and prevent their adulteration, loss, consultation or unauthorized treatment, as well as detecting deviations of information.

In the event that personal data is housed, even temporarily, outside the national territory, the importer must be in countries considered to have adequate levels of European data protection standards, in accordance with Directive 95/46 / CE, of the European Parliament and of the Council, modifying, concordant and complementary.

At the end of this contract, they are obliged to return or delete from all their systems and physical and logical files, whether they are their own or contracted to third parties, the personal data accessed, obtained or processed under this contract, as well as the associated metadata, if applicable.

Information of any type referring to specific or determinable natural or legal persons, by way of example, any numerical, alphabetical, graphic, photographic, acoustic or any other type of information that refers to them directly or indirectly, in accordance with the provisions, is considered personal data provided in Article 4 of Law No. 18,331 and Articles 1 and 4 of Decree No. 414/009.